User interface for a device for playback of multimedia files

The present invention relates to a user interface for a device
for playback of multimedia files having means for navigating
5   within a plurality of multimedia files and/or means for
changing a playback order, and to a method for navigating
within a plurality of multimedia files and/or for changing a
playback order. Furthermore, the invention relates to a device
for playback of multimedia files using such user interface or
10   method.

Today a plurality of multimedia devices for storage and
playback of multimedia files are available. An example are
devices capable of playback of compressed audio files, such as
15   files in mp3, mp3Pro or WMA format. Of course, a variety of
other compression formats exist. A further example are portable
video players, which allow playback of movies or short video
clips as well as the presentation of photos by means of a
slideshow. Also electronic books, which are used for displaying
20   text files, are multimedia devices in this context. A lot of
further types of multimedia devices are likely to be developed.
The multimedia files are generally stored on optical disks such
as CD-R, CD-R(W), DVD or DVD±R(W), on storage cards (e.g. SD-
card, CompactFlash-card, etc), or even on hard disks. Some
25   multimedia devices are connected via a cable or wirelessly to a
personal computer (PC) for accessing multimedia files stored on
the PC. Other multimedia devices receive multimedia files via
an external network, e.g. via the internet. Due to the
compression and the large available storage capacities these
30   multimedia devices store or access up to several thousands of
multimedia files. Of course, most multimedia devices are also
capable of playing back uncompressed multimedia files.

The navigation within these multimedia files, i.e. within the
35   corresponding multimedia file libraries, is quite cumbersome,
especially for multimedia devices having only a limited or even
no space available for displaying information to the user. This

is, for example, the case for most portable audio and video devices such as mp3-players or video-players, but also for many micro systems or slim-case multimedia devices. Different types of navigation menu modes are known. According to these modes the user navigates within the multimedia files by track numbers or file names, he arranges the multimedia files in folders and browses the folders, or he uses advanced navigation modes, which allow to sort the multimedia files by certain features like genre, album or artist. In the latter navigation menu mode, the user chooses the sorting order in a higher level menu and then enters the file directory. If the user decides to change the sorting order, he has to go back into the high level menu to choose the new sorting order.

It is an object of the invention to propose an improved user interface for a multimedia device.

According to the invention, this object is achieved by a user interface for a device for playback of multimedia files, including means for changing the sorting order and/or the playback order of the plurality of multimedia files; whereby upon changing the sorting order and/or the playback order of the multimedia files the currently selected multimedia file is kept and the new sorting order and/or the playback order is determined by at least one property of the currently selected multimedia file.

Alternatively, the above object is also achieved by a method for navigating within a plurality of multimedia files, including the step of changing the sorting order and/or the playback order of the plurality of multimedia files, whereby upon changing the sorting order and/or the playback order of the multimedia files the currently selected multimedia file is kept and the new sorting order and/or the playback order is determined by at least one property of the currently selected multimedia file.

The changing of the sorting order in accordance with the currently selected multimedia file, e.g. the multimedia file chosen in a menu, allows a fast access to further multimedia files having a specific property. If the user has found an

5   multimedia file by, for example, a specific artist, by simply activating the means for changing the sorting order a number of times he can find other multimedia files by the same artist, other multimedia files from the same album (for example in the case of audio files or photos), other multimedia files from the

10 same year, etc. There is no need to go back to the high-level menu to change the sorting order, which would mean that the user had to search for the previously selected multimedia file again. Navigation is, therefore, more convenient.

15 Similarly, changing of the playback order is very convenient during playback of the multimedia files. If during playback the user decides that he wants to play back more multimedia files having the same property as the currently selected, i.e. played back multimedia file, e.g. the same artist, the same author or

20 the same subject, he simply activates the means for changing the playback order. The playback order is then changed and more multimedia files having the desired property are played back.

While changing of the sorting order is especially advantageous

25 if the multimedia device includes a display for displaying information about the multimedia files, changing of the playback order is also desirable for a device for playback of multimedia files having only a limited display without the capability of displaying variable text, or even no display or

30 no means for a feedback of the playback order at all. In this case no advanced navigation as described above is necessary, since the available information cannot be displayed. However, the changing of the playback order is still conveniently achieved.

35

Advantageously, the user interface further includes means for giving a feedback of the sorting order and/or the playback order. In this way the user is informed about the current sorting order and/or the playback order. Each change of the sorting order and/or the playback order is instantly indicated by the specific means, so that the user has a direct feedback to his actions. For example, the means for giving a feedback of the sorting order and/or the playback order can give an acoustical feedback like a beep or a speech signal. This is especially convenient if no optical feedback is available. Preferably, an optical feedback is given, e.g. by a display. In this case the feedback can be given in the form of a word or a short text, or by a symbol. Of course, other types of feedback are possible, e.g. by using different colours or by highlighting text elements. Advantageously the display displays information about at least two multimedia files of the plurality of multimedia files. In this case means are preferably provided for marking a currently selected multimedia file. Such a display already allows an efficient navigation within the plurality of multimedia files. However, it is likewise possible that the display displays information about only one multimedia file of the plurality of multimedia files.

Advantageously, the means for changing the sorting order and/or the playback order include a button for changing the order by running through a predefined sequence of properties of the currently selected multimedia file.
In this way only a single button is needed for either changing the sorting order or the playback order, which is preferable for a device having only limited space available for the user interface, e.g. a portable device. In case both possibilities are provided, either a dedicated button is provided for each function or a single button is provided for both functions. Since both functions are on the one hand quite similar, but on the other hand not used at the same time, the provision of a single button does not lead to any operating conflicts.

Alternatively, the means for changing the sorting order and/or
the playback order include two buttons for changing the order
by running in opposite directions through a predefined sequence
of properties of the currently selected or played back
multimedia file. This has the advantage that by providing only
one additional button the ease of operation is further
increased. Especially if sorting is possible according to a
large number of properties of the multimedia files, it is
preferable to have the possibility to run through these
properties in both directions. For example, if ten properties
are available and the user wants to change from property #3 to
property #1, it is more convenient to go to #1 via #2 instead
of going to #1 via #4 to #10.

Preferably, the means for changing the sorting order and/or the
playback order include a specific button for each property of
the currently selected or played back multimedia file which is
used for determining the order. This allows direct access to
each sorting order, which is the most convenient solution.
However, this solution is not feasible if the available space
is too limited, e.g. because of the miniaturization of the
device or because too many properties are available for
sorting.

Advantageously, the properties of the multimedia files used for
determining the sorting order and/or the playback order are
user-definable. For example, the user might add descriptive
information to his collection of photos indicating for each or
at least some photos the persons or the locations depicted in
the photos, the person who took the photos, the date etc.

Favourably, the properties of the multimedia files used for
determining the order are included in the multimedia files.
This has the advantage that the necessary properties are
available to any device used for playback of the multimedia

files. Alternatively, the properties of the multimedia files used for determining the order are stored in the device for playback of multimedia files. This is advantageous for file formats, which do not offer any possibility to add specific
5   properties. For example, some formats may not allow to include a user weighting or rating. Other properties which may be used for sorting include the ID3-tags known from mp3-files (with artist, album, genre, release year), the creation date, the last access time, the number of accesses, or any other
10   available metadata related to the multimedia files.

Preferably, a device for playback of multimedia files includes a user interface or performs a method according to the invention.
15
For a better understanding of the invention, an exemplary embodiment is specified in the following description with reference to the figures. Though the figures show a device capable of playback of audio files, the invention is also
20   applicable to other types of multimedia devices. It is understood that the invention is not limited to this exemplary embodiment and that specified features can also expediently be combined and/or modified without departing from the scope of the present invention. In the figures:
25
Fig. 1   shows displays of two devices for playback of audio
              files;
Fig. 2   shows a navigation menu according to the invention
              on a first type of display; and
30   Fig. 3   shows a playback menu according to the invention on
              a second type of display.

In Fig. 1a) a display 1a of a device for playback of audio files, e.g. a portable mp3-player, is shown. Besides a
35   plurality of symbols and a numerical array for indicating the playing time of an audio file the display 1a includes a three-

line text array 2, which is capable of displaying a certain
amount of variable text. In addition, the display 1a has a
special array 4 in which the sorting and/or playback order of
the audio files is indicated, e.g. according to year, folder,
5   artist, album, genre, or playlist. Of course, other properties
of the files like the last access time, the number of accesses,
the length, the creation date or even a personal weighting by
the user etc. can also be used for sorting.

10   A more limited display 1b for a device for playback of audio
files is depicted in Fig. 1b. Similar to the display described
with reference to Fig. 1a, the display includes a numerical
array for indicating the playing time of an audio file and a
plurality of symbols. However, instead of the text array a
15   further numerical array 3 is included for indicating the
current file number. In addition, specific symbols 5 are
provided for indicating the sorting and/or playback order. Due
to the limited available space the symbols 5 are arrows
pointing at descriptive words outside the display. Of course,
20   with additional space available it is likewise possible to
directly display the descriptive words instead of the symbols
5.

A navigation menu for a display 1a having a text array 2 is
25   depicted in Fig. 2. In the example the text array has three
lines. In each line an audio file is listed by indicating the
artist, the title or the track number, the release year and the
genre. Other information may also be listed. It is to be noted
that the amount of listed information depends on the available
30   space and, possibly, on the user preferences. Generally only
some of the above information will be listed. In Fig. 2a) the
audio files are sorted according to their title. One line 6 of
the display is highlighted for indicating the currently
selected file. By scrolling the list the user selects a
35   specific audio file for playback. Scrolling the list can be
performed in various ways, e.g. by changing the highlighted

line 6 or by scrolling the text. In the first case in the
beginning the top line is highlighted. When the user scrolls
down, the highlighting is first shifted to the mid-line and
then to the bottom line. Upon further scrolling down, while the

5   highlighting is shifted back to the top-line, the next three
audio files are displayed. In the second case always the mid-
line (or any other fixed line) is highlighted. Upon scrolling
the indicated audio files are shifted up or down according to
the user request. Both methods allow to scroll to any desired

10   audio file.

For easier navigation the device for playback of audio files
has a special button (not shown) for re-sorting the audio
files, a so-called 'arrange key'. By pressing this button the

15   user changes the sorting order of the audio files. In Fig. 2b)
such a re-sorting is shown. By pressing the button once the
sorting order is changed to 'by genre', i.e. the audio files
are now listed according to their genre. As can be seen in the
figure, all three audio files indicated in the display belong

20   to the same genre, e.g. Pop. The sorting order within the top-
level sorting is device dependent. In the example, within the
genre the audio files are still sorted according to their
title. The new sorting is based on the properties of the
selected audio file, i.e. the highlighted audio file. As can be

25   seen the highlighted audio file is kept, only the remaining
indicated files are changed. Since the highlighted audio file
has the genre 'Pop' and the new sorting is according to the
genre, the newly indicated audio files also have the genre
'Pop', provided files having this genre are available in the

30   device for playback of audio files. By pressing the sorting
button once again, the sorting order is changed from 'by genre'
to 'by year'. This is depicted in Fig. 2c). Now all indicated
audio files have the same release year. Again, the highlighted
audio file is kept, only the other indicated audio files are

35   updated. The sorting order within the release year again is
according to the title. The re-sorting allows fast access to

further audio files having a specific property. If the user has
found an audio file by, for example, a specific artist, by
simply pressing the sorting button a number of times he can
find other audio files by the same artist, other audio files
5   from the same album, or other audio files from the same year.
There is no need to go back to the high-level menu to change
the sorting order, which would mean that the user had to search
for the previously selected audio file again. Navigation is,
therefore, more convenient.
10

In the example only one button is provided for re-sorting the
audio files. Pressing the button changes the sorting order in a
predefined sequence, e.g. year → artist → album → genre. Of
course, it is likewise possible to provide a specific button
15   for each sorting order, or to provide two buttons for running
through the predefined sequence in both directions, i.e. year ↔
artist ↔ album ↔ genre.

A similar concept applies to the playback order of the audio
20   files. This concept is depicted in Fig. 3 for a display without
text array. In this case no advanced navigation is necessary,
since the available information cannot be displayed. However,
the re-sorting can also be performed during playback. As
depicted in Fig. 3a), the playback order of the audio files is
25   'by artist', as indicated by the symbol 5, and currently file
number '18' is played back. If during playback the user decides
that he wants to hear more audio files belonging to the same
genre as the current audio file, he presses a specific button
(not shown) for re-sorting the playback order, the so-called
30   'more from-key'. The playback order is changed to 'by genre',
as indicated by the symbol 5 in Fig. 3b). Therefore, the next
audio file, number '9' in the example, belongs to the same
genre as the current audio file number '18'. By pressing the
button a number of times, the playback order of the audio files
35   is changed in a predefined sequence. Of course, the concept of

changing the playback order at the touch of a button is also
suitable for the above display 1a having a text array. In this
case the 'arrange-key' and the 'more from-key' are
advantageously the same buttons, since both features are on the
one hand similar, but on the other hand not used at the same
time. While the 'arrange-key' is used for navigation before
playback, the 'more from-key' is only used during playback.
Again, it is likewise possible to provide a specific button for
each playback order, or to provide two buttons for running
through the predefined sequence of playback orders in both
directions.